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Analysis

Measuring the environmental cost of hypocrisy

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ABSTRACT

This paper provides an example of how to estimate the marginal environmental cost of hypocrisy using revealed-behavior and self-identification survey responses from coffee drinkers regarding their use of cardboard and plastic (i.e., non-reusable) cups. Coffee shops provide a convenient microcosm for assessing the impact of hypocritical behavior because of (1) readily available, cheap substitutes (i.e., reusable coffee cups), (2) a relatively accurate estimate of the environmental (in particular, carbon) cost associated with using non-reusable cups, and (3) the ability to delineate hypocritical behavior by observing a choice with relatively few potential confounding factors. Hypocritical behavior is measured as a geometric mean of how often an individual takes coffee in a non-reusable cup and the degree to which the individual self-identifies as being concerned about his environmental footprint. All else equal, the more often a person takes his coffee in a non-reusable cup and the greater the degree to which he self-identifies as being concerned about his footprint, the greater the individual's "hypocrisy score." Controlling for other attitudinal and demographic characteristics (including self-identified awareness of environmental issues and willingness to pay for the convenience of using a non-reusable cup), we are able to determine the marginal effect of an individual's hypocrisy score on the environmental cost associated with the use of non-reusable coffee cups.

Epigraph

What there is in this world, I think, is a tendency for human errors to level themselves like water throughout their sphere of influence.
[Leah Price in *The Poisonwood Bible* by Barbara Kingsolver (1998).]

1. Introduction

Although not included among the Seven Deadly Sins by name, hypocrisy has, through the ages, proven itself a worthy enough transgression to merit a few good aphorisms.[1] In the 17th Century, Francois de La Rochefoucauld (1665–1678) quipped, "hypocrisy is the tribute that vice pays to virtue." Three centuries later Heschel (1955) exhorted, "hypocrisy rather than heresy is the cause of spiritual decay", and "there is great merit in knowing our subtle hypocrisies". Jung (1966) professed that, "a little less hypocrisy and a little more self-knowledge can only have good results in respect for our neighbor." Despite their poignancy, and the clarion call these aphorisms make for thoughtful discourse and introspection, economists have heretofore been reticent on the issue of hypocrisy. Our collective silence has seemed particularly deafening when it comes to expounding upon what we alone are best equipped to measure — hypocrisy's external costs. As this paper illustrates, these costs can be estimated quite easily, and possibly to great effect, since exhortations such as Heschel's and Jung's gain requisite credence when cast in monetary terms. Similar to knowing how costly are our consumptive decisions, e.g., in terms of pollution created by the production and consumption of the goods we choose, knowing what portion of these external costs are attributable to specific personal failings, such as hypocrisy, invites introspection not only of our choices, but of our motivations as well.[2]

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[1] The seven sins are (in no apparent order of declivity) wrath, greed, sloth, pride, lust, envy, and gluttony.

[2] At the very least, attempting to monetize what Heschel and Jung have so eloquently identified as the subtle, spiritual, and social burdens of hypocrisy poses a worthy academic challenge.

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To the unsuspecting eye, hypocrisy, defined by Collins English Dictionary (2003) as "the practice of professing standards, beliefs, etc., contrary to one's real character or actual behavior, especially with the pretense of virtue and piety," is merely a specific form of what the contingent-valuation literature defines as "hypothetical bias," or the disconnect between what an individual says he would do in a hypothetical setting and what he actually does when given the opportunity to do so in a real setting (Mitchell and Carson, 1989; Cummings et al., 1997).[3] But this comparison misses a crucial distinction. Hypothetical bias is, as its definition suggests, a consequence of hypothetical thinking, irrespective of the thinker's motives.[4] In contrast, hypocrisy (or, in closer context, we might say, "hypocritical bias") reflects a difference between observed behavior, or revealed preference, and deliberately chosen, symbolic representations of behavior.[5] Indeed, there is nothing hypothetical about hypocritical bias. Hypocrisy, it turns out, is a human foible in a class all its own.

The distinction between hypothetical and hypocritical bias has two key implications. First, positing a hypothetical question is necessary for the measurement of hypothetical bias but not for hypocritical bias. Instead of comparing an individual's hypothetical and revealed preferences, which is necessary for the measurement of hypothetical bias, measuring hypocrisy entails comparing the individual's revealed preference with his own non-hypothetical, self-proclaimed motives; in our case with his self-proclaimed concern for the environment. Second, several approaches have been recommended to lessen or calibrate for the hypothetical nature of contingent valuation questions in an effort to correct for hypothetical bias.[6] These approaches presume a correlation that exists between stated and revealed preference that can be reconciled by making the hypothetical scenario, or its effects, seem more "real." Social psychologists have long noted, however, that there is no necessary correlation between speech and action, thus suggesting a persistent inconsistency between stated and revealed preference (Ajzen et al., 2004).[7] Hypocrisy (and the hypocritical bias that results) is one manifestation of this persistent inconsistency that we feel is especially prevalent in environmental valuation.

This paper provides an example of how to estimate the marginal environmental cost of hypocrisy using revealed-preference and self-identification survey responses from coffee drinkers regarding their use of cardboard and plastic (i.e., non-reusable) cups. Coffee shops provide a convenient microcosm for assessing the impact of hypocritical behavior because of (1) readily available, cheap substitutes (i.e., reusable coffee cups), (2) a relatively accurate estimate of the environmental (in particular, carbon) cost associated with using non-reusable cups, and (3) the ability to delineate hypocritical behavior by observing a choice with relatively few potential confounding factors.[8] In an effort to demonstrate how the effect of hypocritical behavior might best be measured, we calculate a set of "hypocrisy scores" (weighted geometric means) for each coffee drinker in order to represent in cardinal terms the extent of an individual's hypocrisy with respect to choice of cup type.[9]

The scores are purposefully simple in design, allowing for greater flexibility in their interpretation. Specifically, they are calculated as (weighted) geometric means of (1) the percentage of time (per week) the individual takes his coffee or tea in a cardboard or plastic cup (i.e., his "revealed preference", or his own accounting of how often he chooses a non-reusable cup during an average week), and (2) his expressed, general concern for the environment (i.e., his "professed standards, beliefs, etc."). The scores may therefore be interpreted as percentage measures, e.g., a coffee drinker with a score of 0.45 is exhibiting hypocrisy at the 45% level (out of a possible 100%). Although they are difficult to interpret in an absolute sense (i.e., what does 45% hypocrisy really mean?), the scores permit a meaningful interpretation in a relative sense, i.e., the higher a given score, the greater a coffee drinker's hypocrisy with respect to cup choice. By varying the score's weights, our measure of hypocrisy is based more or less on the individual's use of cardboard/plastic cups or his concern for the environment, respectively. The weights therefore reflect the inherent ambiguity in the definition of hypocrisy regarding which component of the definition – actual behavior or professed standards – is more important. The hypocrisy scores are explained in detail in Section 2.

Using a non-split sample survey administered to over 500 coffee and tea drinkers in the city of Logan, Utah, we find that, all else equal, an individual's hypocrisy score (calculated in either of three ways) has a positive effect on his contribution to carbon cost. The average hypocrisy effect is roughly $0.0002 of carbon cost per unit of hypocrisy per week ("unit of hypocrisy" is explicitly defined in Section 2). We find some evidence to suggest that the hypocrisy effect is larger for individuals who

[3] By way of comparison, Merriam-Webster (2014) defines hypocrisy as "behavior that does not agree with what someone claims to believe or feel", and Oxford Dictionaries (2014) as "the practice of claiming to have moral standards or beliefs to which one's own behavior does not conform; pretense". The American Psychological Association defines hypocrisy as "a special case of cognitive dissonance, produced when a person freely chooses to promote a behavior that they do not themselves practice" (APA, 2014). In this paper, we consider hypocrisy and cognitive dissonance to be distinct enough in meaning to represent two different concepts. As explained in detail in Section 4, cognitive dissonance is referred to in our paper as a possible public policy, i.e., as an external stimulus itself that could potentially work to reduce a coffee drinker's hypocritical behavior. This interpretation is consistent with the empirical cognitive-dissonance literature (Dickerson et al., 1992; Aronson et al., 1991; Stone et al., 1994; Fointiat, 2004; Son Hing et al., 2002; Rubens et al., 2013). One final distinction to consider is what might best be labeled "pre-existing" versus "induced hypocrisy". Pre-existing hypocrisy is the type of hypocrisy we have in mind in this paper, where the survey respondent's innately determined hypocrisy is not induced by the survey instrument itself and therefore can be accurately measured. To the contrary, hypocrisy that is induced by the survey instrument draws into question the instrument's construct validity and thus the accuracy of the hypocrisy measure.

[4] An exception is "warm glow" bias, which is rooted in the positive or negative framing of the hypothetical question. For example, Andreoni (1995) finds that contributions to a public good differ considerably when the contribution is framed as creating a positive externality for society (warm glow) as opposed to avoiding a negative externality created by purchasing a competing public good.

[5] Although we refer to observed behavior and revealed preference interchangeably, there is a slight distinction between the two terms. One can think of the former as a special case of the latter, as the latter also refers to past behavior that a survey participant recounts about him- or herself (which is the case for our survey), rather than solely behavior that the researcher is able to observe firsthand.

[6] Examples include calibration using real payment bids for comparable goods (Fox et al., 1998), using certainty responses to adjust responses to bid values (Champ et al., 1997), and reminding respondents of their budget constraints (Loomis et al., 1996).

[7] For example, in LaPiere's (1934) study on racial prejudice, a Chinese couple stopped at more than 250 businesses and received service without hesitation 95% of the time; yet, in response to a letter of inquiry, 92% of the establishments replied they would not accept members of the Chinese race.

[8] In contrast, assessing hypocritical behavior based on the choice of when and where to drive an automobile is more difficult, since points (1) and (3) do not as readily apply.

[9] We acknowledge that the extent of hypocrisy measured in this study is for a single commodity, all else equal, and thus our hypocrisy score is a partial measure. We are not measuring the extent of an individual's hypocrisy in a broader context, e.g., based on the individual's choices over a bundle of commodities over time. Nor are we measuring what might be considered the larger costs associated with the hypocrisy of drinking coffee in the first place, e.g., in terms of the need for international shipping, processing, and potential rainforest destruction. The coffee shops that agreed to participate in this study would never have permitted us to broach issues related to these types of costs with their customers, as this line of questioning would have maligned the very product they strive to profit from — coffee itself.